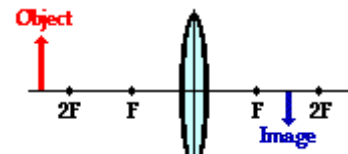


Summary (Convex Lens – Concave Lenses)

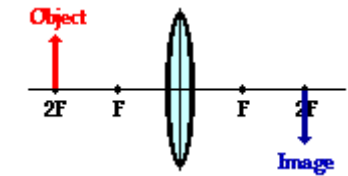
Case 1: The object is located *beyond* 2F

When the object is located at a location beyond the 2F point, the image will always be located somewhere in between the 2F point and the focal point (F) on the other side of the lens.



Case 2: The object is located at 2F

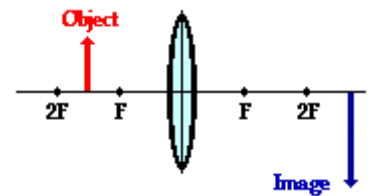
When the object is located at the 2F point, the image will also be located at the 2F point on the other side of the lens. In this case, the image will be inverted (i.e., a right-side-up object results in an upside-down image). The image dimensions are equal to the object dimensions.



Case 3: The object is located between 2F and F

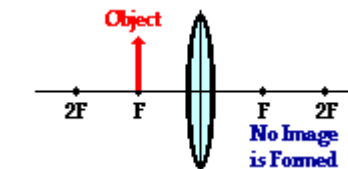
When the object is located *in front of* the 2F point, the image will be located *beyond* the 2F point on the other side of the lens.

Regardless of exactly where the object is located between C and F, the image will be located in the specified region. In this case, the image will be inverted (i.e., a right-side-up object results in an upside-down image). The image dimensions are larger than the object dimensions.



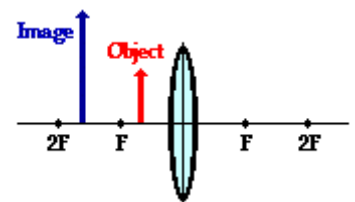
Case 4: The object is located at F

When the object is located at the focal point, no image is formed. After refracting, the light rays are traveling parallel to each other and cannot produce an image.

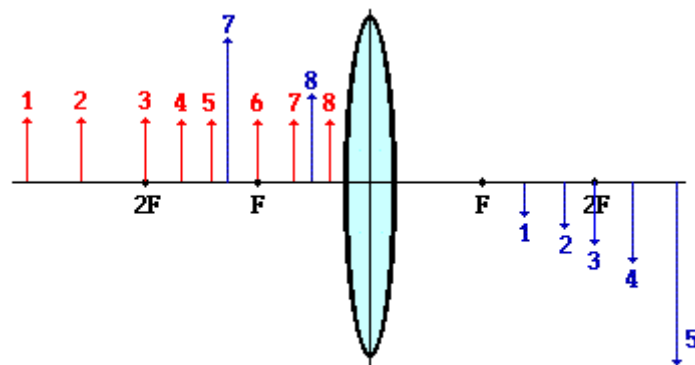


Case 5: The object is located in front of F

When the object is located at a location in front of the focal point, the image will always be located somewhere on the same side of the lens as the object. Regardless of exactly where in front of F the object is located, the image will always be located on the object's side of the lens and somewhere further from the lens. The image is located *behind* the object. In this case, the image will be an upright image. The magnification is greater than 1. Finally, the image is a virtual image.



Summary



Each of the numbered objects (except #6) has an image with the corresponding number; its relative location, size, and orientation are shown.

Diverging

